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**Question Paper Code: 93902**

B.E./B.Tech. DEGREE EXAMINATION, DEC 2021

Third Semester

Chemical Engineering

19UCH302 - PROCESS CHEMISTRY

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. What is meant by Halogenation? CO1- R
  - (a) Introduction of Halogen atom
  - (b) Removal of Halogen atom
  - (c) Introduction & Removal of Halogen atom
  - (d) None of the above
2. Which reagent is used in reduction reaction CO1- R
  - (a)  $\text{NaBH}_4$
  - (b) PCC
  - (c)  $\text{K}_2\text{Cr}_2\text{O}_7$
  - (d)  $\text{KMnO}_4$
3. Sucrose is CO2- R
  - (a) Disaccharides
  - (b) Polysaccharides
  - (c) Triose
  - (d) Triaccharides
4. The first amino acid of any polypeptide chain in eukaryotes is CO2- App
  - (a) Glycine
  - (b) Valine
  - (c) methionine
  - (d) Alanine
5. Which among the following is the most deactivating meta-directing group in aromatic substitution reaction? CO1- R
  - (a)  $-\text{COOH}$
  - (b)  $-\text{SO}_3\text{H}$
  - (c)  $-\text{COOH}$
  - (d)  $-\text{SO}_3\text{H}$
6. The blue print process involves the use of CO1- R
  - (a) Indigo dyes
  - (b) Vat dyes
  - (c) Indigo dyes
  - (d) Vat dyes

7. A colloid is a stable combination of particles of one substance that are dissolved or suspended in a CO1- R
- (a) second substances (b) First substances  
 (c) Both a & b (d) None of these
8. Equipotential surface is one which has all points at ----- potential CO1- U
- (a) Zero (b) Different (c) Same (d) None of the above
9. If the rate of a reaction is expressed by, rate = A [A]<sup>2</sup> [B], CO1- U  
 the order of reaction will be
- (a) 2 (b) 3 (c) 1 (d) 0
10. Collision Theory is applicable to CO5- U
- (a) First order reactions (b) Zero order reactions  
 (c) Biomolecular reactions (d) Intramolecular reactions.

PART – B (5 x 2= 10 Marks)

11. Define reduction reaction reaction with suitable example CO2- App
12. List out any two difference between starch and cellulose CO3- U
13. What is a reactive methylene group? CO1- U
14. What are colloids? Explain with example CO1- U
15. How does such a curve change with the addition of a catalyst? CO2- App

PART – C (5 x 16= 80 Marks)

16. (a) Explain the mechanism of enzyme catalyzed reaction with example . CO2- App (16)  
 Or  
 (b) Explain esterification with the mechanism involved ? CO2- App (16)
17. (a) Define Carbohydrates. Classify them with suitable examples. CO2- App (16)  
 Or  
 (b) Classify aminoacids in various ways with suitable examples CO3 -Ana (16)
18. (a) What is Grignard reagent? How it is prepared? Can it be isolated and kept in pure state? Give reasons for your answer. What happens when Garignard reagent react with (a) 2<sup>0</sup>-alcohol (b)Nitrile CO2- App (16)  
 Or  
 (b) Discuss about the classification of dyes based on their chemical application .Give the any one method of preparation and mention its application CO2- App (16)

19. (a) List out the differences between Adhesion and Cohesion CO2- App (16)  
Or  
(b) What is DLVO theory and explain the concept of electrical double layer. What type of information do you get from DLVO theory? CO2- App (16)
20. (a) List out the difference between order and molecularity of a chemical reaction. CO1- U (16)  
Or  
(b) Write short notes on complex reactions CO1- U (16)

